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Stütze für eine solche Annahme, dass ein pigmentoser Degeneration anheimgefallenes Organ einer Verjüngung durch Erwerbung einer neuen Funktion fähig wäre . . . ???—und dann schliesst gar der Satz, the agens of rejuvenescence being some form of natural selection! . . . heisst das etwa nicht, den Spöttern über die Selektionstheorie Wasser auf die Mühle tragen?! Es wird Einem ja schwindlig, wenn man an diesen babylonischen Turnbau nur denkt!”

W. E. RITTER.

### VERTEBRATE PALEONTOLOGY

**Pelycosauria of North America.**<sup>1</sup>—There are few groups of animals at the present day of greater interest to the paleontologist and evolutionist than the extinct air-breathers of the Permian; and, of the Permian vertebrates, those of America, in their abundance, variety and excellence of preservation are easily the chief. As is well known, Professor Case has, for the past ten years or more, given much intelligent attention to the Permian reptiles of America, and especially to the group which he has described in the present handsome memoir as the “suborder” Pelycosauria. And the writer is inclined to think that he is a little too conservative here, for he believes that the structural characters are so diverse, so widely divergent from those of the modern Sphenodon, that to include them both in one and the same order is to hinder rather than advance an intelligent taxonomy of the reptiles. Mr. Case has given in the volume a complete history of the literature of the group, a taxonomic revision, a thorough discussion of the structural characters of the pelycosaurs, and the facts of their range and distribution. He has not, rather wisely, entered very fully into the many philosophical matters that the animals suggest. He expresses the opinion, however, that the pelycosaurs represent a highly specialized and short-lived branch of the rhynchocephalian stem, and in that he will probably have the concurrence of most paleontologists. But, to the writer, this does not seem altogether certain. The group has an abundance of generalized characters in the vertebræ, pectoral and pelvic girdles, cleithra, etc., the specialization consisting, for the most part, in the extraordinary and most bizarre elongation of the vertebral spines, the teeth, etc. His reasons for the grouping he makes are chiefly to be found in the temporal region of the skull; and the writer

<sup>1</sup> Case, E. C. Revision of the Pelycosauria of North America. *Memoir of the Carnegie Institution of Washington*, pp. 1-176, pls. I-XXXV, 1907.

does not think he is expressing too heretical an opinion when he doubts the great importance of this region in the primary classification of the reptiles. The grouping of the reptiles into two subclasses, the Diapsida and Synapsida, based chiefly upon the temporal structure, is rejected by most students of the reptiles, and the very aberrant structure of this region in the pelycosaurs, especially the presence of a "prosquamosal" bone, rather shakes one's faith. However, we are not quarrelling with the author for not going into these doubtful discussions. He has, what is better, given us excellent material for future philosophizing in his full and lucid descriptions and many illustrations.

S. W. WILLISTON.

**The Conrad Fissure.**<sup>1</sup>—Mr. Brown has given us in this paper an excellent critical and descriptive list, well illustrated, of a very important pleistocene bone deposit, especially interesting as located in the southwest. The material, for the most part collected, and it need not be said skillfully collected by the author, is abundant, including seven species of insectivores, two of bats, nineteen of carnivores, as many of rodents, and nine of ungulates, together with several of amphibians and reptiles. Of these he describes a new twenty species and two genera, the more noteworthy of the new genera being one of a new type of saber-toothed cats. Conspicuous for their absence are remains of the large edentates and of the proboscideans, from which the author is inclined to the belief that the former, at least, were not then in existence in North America. That some of the sloths were in existence in South America at that period is more than probable, if we take into account *Gryphotherium*, and the same logic would exclude the proboscideans from the fauna, which is not at all probable. He also concludes that the fauna was boreal, as indeed would be indicated by the remains of musk oxen. The paper is a valuable addition to our faunal pleistocene literature.

S. W. WILLISTON.

**The Ankylosauridae.**<sup>1</sup>—Mr. Brown has given us a rather startling restoration of what he believed to be a new family of

<sup>1</sup>Brown, Barnum. The Conrad Fissure, A Pleistocene Bone Deposit in Northern Arkansas, with Descriptions of Two New Genera, and Twenty New Species of Mammals. *Mem. Amer. Mus. Nat. Hist.*, IX, pp. 157-208, pls. XXIV, XXV, 1908.

<sup>1</sup>Brown, Barnum. The Ankylosauridae, A New Family of Dinosaurs from the Upper Cretaceous. *Bulletin of the American Museum Nat. Hist.*, X, XXIV, pp. 187-201, 1908.